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विनाइल कोटेड फेब्रिक की विशष्टि

(चौथा पनरीक्षण)

Specification for Vinyl Coated Fabrics

(Fourth Revision)

ICS 59.080.40

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FOREWORD

This Indian Standard (Fourth Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Rubber and Rubber Products Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

Vinyl coated fabrics commonly known as leather cloth and manufactured by applying by applying to one side of base fabric, a substantially continuous coating of a suitably plasticized polymer of vinyl chloride, or a copolymer the major constituent of which is vinyl chloride. Such coatings are known as poly(vinyl chloride) (PVC) coatings.

When subjected to constant tensile load for a given time, vinyl coated knitted fabric stretches. When the load is removed, the coated fabric tends to recover its initial length. In practice, the visco-elastic characteristics of plasticized PVC result in a permanent residual elongation, the magnitude of which depends upon many factors, such as the size of the applied load, the duration of loading, the width over which the load is applied, the elasticity of coated fabric, the temperature and humidity during the test, and the time allowed for recovery after removal of the load. Coated fabric, under constant stress in use, therefore, should have good elasticity and a small permanent elongation in use. These characteristics of elongation and elastic recovery have been introduced, along with the test method to determine them.

The third revision of this standard was published in 1984. This standard covered six grade of vinyl coated fabrics, namely Grade 1 to Grade 6. This standard prescribed two classes of material, namely, class A and class B for all Grades depending on the resistance to flame. Further, this standard did not include requirements for the following types of coated fabrics:

a) Based on non – woven materials,
b) On which all or part of the coating is foamed,
c) That are permeable to air, and
d) With knitted backing.

In this fourth revision, the standard is upgraded the standard with current trade practices and quality requirements.

Flammability testing is now considered to be one of the most important requirements of vinyl coated fabrics because it has crucial safety implications in the event of a fire. It has been statistically shown that the major cause of fatalities in fire can be directly attributed to the accidental ignition of upholstery, so it is sensible that proper flammability standards are drafted.

In this revision, requirement of flame resistance has been modified, based on developments over a period of time. Taking into cognizance, the fire hazard factor, in use of vinyl coated fabrics, three classes of material have been prescribed, namely, Class A, Class B and Class C. Class A and Class B have been recommended to be used in high hazard category and Class C material is recommended to be used in low hazard category. The recommended usage of various classes of expanded vinyl coated fabrics have also been covered in this standard.

In view of availability of heavy knitted fabric as backing cloth, vinyl coated knitted fabric have also been incorporated. Further, the following changes have been made:

a) Vinyl coated fabric have been classified depending on the type of base fabric;
b) New requirements of time factor between manufacture and testing has been specified;
c) Requirement of tear strength has been incorporated;
d) Requirement of block resistance has been incorporated to determine resistance to blocking at elevated temperature;
e) Requirement of water proofness has been added to check water penetration;
f) Test method for calculating loss of mass on heating has been modified;

(*Continued on third cover*)

Indian Standard

SPECIFICATION FOR VINYL COATED FABRICS

(Fourth Revision)

1 SCOPE

1.1 This standard prescribes requirements, methods of sampling and test for vinyl coated fabrics whether plain, embossed, printed or otherwise treated, on woven or knitted fabrics, obtained by applying on one side of base fabric, a substantially continuous coating of a suitably plasticized polymer of vinyl chloride, or a copolymer, the major constituent of which is vinyl chloride.

1.2 This specification covers fabrics coated with solid PVC.

1.3 This standard does not cover requirements for the following types of coated fabrics:

a) Based on non-woven materials,

b) On which all or part of the coating is foamed, and

c) That are permeable to air.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
IS/ISO 105-B01 : 2014	Textiles — Tests for colour fastness: Part B01 Colour fastness to light : Daylight
IS/ISO 105-B02 : 2014	Textiles — Tests for colour fastness: Part B02 Colour fastness to artificial light : Xenon arc fading lamp test
177 : 1989	Cotton drills — Specification (*fourth revision*)
285 : 2021	Laundry soaps — Specification (*fourth revision*)
296 : 1986	Specification for sodium carbonate, anhydrous (*third revision*)
2244 : 1972	Glossary of terms relating to treated fabrics (*first revision*)
4905 : 2015	Random sampling and randomization procedure (*first revision*)
7016 (Part 1/Sec 1) : 2016/ISO 2286-1 : 1998	Methods of test for coated and treated fabrics: Part 1 Determination of roll characteristics, Section 1 Methods for determination of length, width and net mass (*second revision*)
7016 (Part 1/Sec 2) : 2019/ISO 2286-2 : 2016	Methods of test for coated and treated fabrics: Part 1 Determination of roll characteristics, Section 2 Methods for determination of total mass per unit area, mass per unit area of coating and mass per unit area of substrate (*second revision*)
7016 (Part 2) : 2015/ ISO 1421 : 1998	Methods of test for coated and treated fabrics: Part 2 Determination of tensile strength and elongation at break (*second revision*)
7016 (Part 3/Sec 1) : 2017 /ISO 4674-1 : 2003	Methods of test for coated and treated fabrics: Part 3 Determination of tear resistance, Section 1 Constant rate of tear method (*second revision*)
7016 (Part 4) : 2003/ ISO 7854 : 1995	Methods of test for coated and treated fabrics: Part 4 Rubber-or plastics-coated fabrics — Determination of resistance to damage by flexing (*second revision*)
7016 (Part 5) : 2019/ ISO 2411 : 2017	Methods of test for coated and treated fabrics: Part 5 Rubber-or plastics-coated fabrics — Determination of coating adhesion strength (*second revision*)

IS No.	*Title*
7016 (Part 9) : 2003/ ISO 5978 : 1990	Methods of test for coated and treated fabrics: Part 9 Rubber-or plastics-coated fabrics — Determination of blocking resistance (*second revision*)
15061 : 2002	Automotive vehicles — Flammability requirements

3 TERMINOLOGY

For the purpose of this Standard, the definitions given in IS 2244 and the following shall apply.

3.1 Printed Vinyl Coated Fabrics — Vinyl coated fabrics with a continuous or discontinuous, transparent or coloured surface coating, which also includes, all multitoned effects and lacquered surfaces.

4 CONDITIONING

4.1 Most coated fabrics contain a certain amount of moisture absorbed from the air with which they are in contact, and the amount of moisture depends on the quantity of water vapour in the air. Certain properties, particularly mass and those concerned with the breaking of threads, are affected by the moisture content of the fabric. On the other hand, properties like flexing, blocking and flammability are affected by ambience temperature. Therefore, in order to standardize, conditioning of test pieces are done in an atmosphere of controlled humidity and temperature before testing.

4.1.1 *Standard Atmospheric Conditions for Testing*

Unless otherwise specified, the test specimens shall be conditioned, in an atmosphere with relative humidity of 65 ± 5 percent and temperature of 27 ± 2 °C for 16 h.

5 TIME ELAPSED BETWEEN MANUFACTURE AND TESTING

5.1 In order to ensure that the material attains dimensional stability due to stress relaxation, for all test purposes, the minimum time between manufacture and testing shall be 16 h.

5.2 In order to bind the user and supplier, to stipulate time for carrying out conformity test for supplied material, the following shall apply.

5.2.1 For non-product test, separate test pieces are required for testing. The maximum time between the manufacture and testing shall be eight weeks and for evaluation intended to be comparable, the tests as far as possible, shall be carried out after the same time interval.

5.2.2 For product test, whenever possible, the time between manufacture and testing should not exceed six months. In other cases, tests shall be made within four months of the date of the receipt of the product by the customer.

6 TYPES, GRADES AND CLASSES

6.1 Types

There shall be two types of vinyl coated fabrics, depending upon the type of base fabric used as indicated below:

a) Type A — Made from woven fabric; and

b) Type B — Made from knitted fabric.

6.2 Grades

There shall be four grades for Type A material and two grades for Type B material, as indicated in Table 1. The recommended uses of these grades is given in 7 for guidance purpose only.

6.3 Classes

Based on flame resistance characteristics, all grades of material shall be of three classes, class A, class B and Class C.

6.3.1 Class A material is recommended to be used in high hazard category of usage like upholstery for seats, berths and cushions in railways and automobiles, sleeping accommodations in hospitals, hotels, prisons, home and office furniture, off shore installations etc. The material shall be tested for flame resistance to meet the requirements as given in **8.12.1**.

6.3.2 Class B material is recommended for usage in curtains, blinds and/or other hanging materials. The material shall be tested for flame resistance to meet the requirements as given in **8.12.2**.

6.3.3 Class C material is to be used in low hazard category usage and shall be tested to flame resistance as given in **8.12.3**.

7 RECOMMENDED USAGE OF VINYL COATED FABRICS

7.1 Type A

a) *Grade 1 and Grade 2* — Used in heavy duty upholstery for seats and cushions, backs and facings in railways and automobiles, for home and office furniture and for larger suitcases.

b) *Grade* 3 — Used primarily in upholstery, medium size suitcases and in covering the automobile door panels, side panels, door arm rests and the like.

c) *Grade* 4 — Used mainly to enhance the appearance as in wall lining, automobile headlining, visors, and the like. It is also used for book binding.

7.2 Type B

a) *Grade* 1 — Used in upholstery for seats and cushions, backs and facings in railways and automobiles.

b) *Grade* 2 — Used in upholstery for automobiles, covers for mattresses, stretchers and sleeping accommodations in hospitals, hotels, prisons and the like.

8 REQUIREMENTS

8.1 Description

The vinyl coated fabrics shall consist of polyvinyl chloride or vinyl copolymer which is either spread or is laminated, on to textile material

8.2 Base Fabric

The base fabric, in general, shall be cotton, rayon or other synthetic fibre or their blend. For woven back grades 1 and 2 materials, the base fabric shall be sateen/ satin and for grade 3, it shall be twill/drill. In case of woven fabric, it shall be dyed/scoured. However, for black shades, sulphur dyes shall not be used

8.3 Appearance

The material shall be of uniform surface finish and shall contain no bubbles and blisters. It shall be reasonably free from foreign matters, pinholes, creases, streaks, cracks and other flaws, when a test piece 2 m long and having the full width of the material shall be cut and placed on a flat illuminated surface suitable for showing up defects. The edges shall be smooth and free from cuts.

NOTES

1 The attention of users is drawn to the fact that the coated fabric may be damaged if wrong methods of cleaning are used. Furniture creams, dry cleaning solvents, pastes or waxes should not be used. For cleaning, only a soft cloth damped with soap and water or a mild detergent solution should be used. The surface should then be well rinsed with plain water and dried with a cloth.

2 It is possible that the surface is marked with the pattern of the back surface if the roll has been wound too tight. Such marks are reversible and acceptable. They can be easily identified by heating a piece of coated fabric for a few minutes in an oven at a temperature around 100 °C, the marking due to tight winding disappears.

8.4 Colour, Grain, Embossing and Finish

The quality of the colour, grain embossing and finish of the material, whether, in single colour or multi-colour effects shall be as agreed between the purchaser and the supplier. This agreement can be based on a reference sample, and on illustrations or other ways of indicating acceptable deviations from the reference sample. The method given in Annex A is only a recommended method for guidance.

8.5 Coating

The compound used for coating shall be made from suitably compounded vinyl chloride polymer or copolymer, the major constituent of which is vinyl chloride. It shall be fully pigmented to meet specified colour requirements and shall be free from disagreeable odour. The coating shall be uniformly applied on one side of the base fabric either by spreading or by laminating

NOTE — In case of sateen/satin and twill/drill the coating shall be on the back side.

8.6 Resistance to Heat and Loss of Mass on Heating

The coating shall withstand an exposure of 24 h in an hot air circulating oven at a temperature of 100 ± 2 °C without showing signs of exudation or stickiness, when tested as prescribed in Annex B. The loss of mass shall not be greater than 5 percent.

8.7 Resistance to Cold

The coating shall not crack when a sample specimen, about 250 mm long and about 6 mm wide, is subjected to a bending test around a 6 mm diameter steel pin and exposure of 1 h at 0 ± 2 °C. The steel pin and coated fabric shall be kept at 0 ± 2 °C for a required period of 1 h and the test carried out within 60 s of removal of the sample. Wherever, practicable, the test shall be carried out in a cooling chamber.

NOTE — The test shall be carried out with coated surface on the outside.

8.8 Colour Fastness to Dry and Wet Rubbing

When tested as prescribed in Annex C, the material shall be considered satisfactory, when stain on cotton rubbing cloth is rated not less than No. 4 with the grey scale under suitable illumination.

NOTES

1 Metallic shades and printed leather cloth are not likely to withstand this test. However, when printed leather cloth is intended to be used for upholstery purposes, the number of abrading cycles shall be as agreed to between the supplier and the purchaser.

2 When testing black coloured coated fabric, caution is to be taken in cleaning the surface before testing and distinguishing between colour stains and dust stains.

8.9 Colour Fastness to Light

The test pieces shall be tested for colour fastness to daylight according to Annex D. Alternatively, a quicker method of determining colour fastness to light by xenon arc, as prescribed in IS/ISO 105-B02 may be carried out. For this test, exposure method 3 or 4 are recommended. The material shall be considered satisfactory, when colour fastness rating of any test piece, is not less than No. 4 of the standard pattern of plain dyed wool fabrics, as prescribed in IS/ISO 105-B02. Effect on printing may be observed in case of printed material.

8.10 Dimensional Change

The shrinkage of the material when tested as prescribed in Annex E shall be not more than 3 percent in the weft or warp direction.

8.11 Adhesion of Print (for Printed Vinyl Coated Fabrics)

When examined as prescribed in Annex F, the number of cycles to remove either the printed pattern or any area of printed material shall be greater than five (ten strokes of abrading member).

NOTE — In case of metallic and white printing inks, adhesion of print shall be subject to agreement between the purchaser and the supplier.

8.12 Flame Resistance

The fire resistance property shall be inherent quality of coating and no subsequent treatment should be done after the manufacture to achieve this property. The fabric of three classes shall be tested for flame resistance as under:

8.12.1 *Class A* — The fabric shall be tested for flame resistance and shall meet the requirements as given in **3.2** of IS 15061.

8.12.2 *Class B* — The fabric shall be tested for flame resistance and shall meet the requirements as given in **3.3** of IS 15061.

8.12.3 *Class C* — The fabric shall be tested for flame resistance as described in Annex G and the duration of flaming of the specimen tested shall not exceed 20 s, after removal of the source of ignition.

8.13 Adhesion of Coating

When tested in accordance with IS 7016 (Part 5), the force required to separate the ply over a distance of 100 mm, should be not less than 2 Kgf (20 N) per 50 mm width.

NOTE — If the coating does not pull down to the backing or fabric, then the test machine should be stopped and the coating on the ply in the jaw shall be carefully cut to the fabric. Then the machine shall be restarted.

8.14 Blocking Resistance

When tested in accordance with IS 7016 (Part 9) at 70 ± 2 °C for 3 h, the specimen shall show no blocking that is coated surfaces shall separate without any signs of adhering.

8.15 Resistance to Penetration of Water (For Grade 1 and 2 of Type A and Type B)

When tested in accordance with Annex H, no drop of water shall appear in 30 min, on the underside of the test piece, up to 50 cm water column height.

8.16 Elongation and Elastic Recovery for a Constant Load (for Type B)

When subjected to constant tensile load for a given time, a coated fabric stretches. When the load is removed, the coated fabric tends to recover its initial length. Coated fabric under constant stress in use, therefore, should have good elasticity and a small permanent elongation in use.

Expressing the permanent elongation as a percentage of the initial elongation gives suitable measure of elasticity of a coated fabric. This parameter known as Elastic recovery is the portion of the initial elongation, which is recovered during relaxation period and is expressed as a percentage of the initial elongation.

The method used shall consist of the application of a 10 kg load to a test specimen 100 mm wide for 10 min followed by 10 min relaxation. When tested as prescribed in Annex J, the elongation and elastic recovery, shall meet the following requirements.

The elongation in warp direction, shall be more than 10 percent and in weft direction it shall be more than 20 percent.

The Elastic recovery, as percentage of actual elongation, in both directions shall be more than 80 percent.

NOTE — In the case of materials of low extensibility, in order to obtain a sufficiently high degree of accuracy, it may be necessary to use longer test specimens and modify the method of calculation of the result. In all cases, the exact conditions of test should be stated.

It may be desired to know the load needed to produce a particular elongation or elastic recovery. This may be determined by carrying out the test at a number of suitably selected loads and by interpolation of the results.

8.17 Bleeding Test

The coated surface of the finished material shall show no change in original shade or any tackiness when a sample specimen of 40 mm square is violently shaken for 10 min at 60 °C in distilled water; washed with soap (conforming to Type 1 of IS 285) and water. The observation shall be made on rinsed sample after drying with filter papers.

8.18 Surface Resistance to Chemicals

The coated surface of the sample, shall not show deterioration in shade or any tackiness, when a sample specimen of 40 mm square is subjected to 24 h immersion at 27 ± 2 °C in one percent Soap solution (conforming to Type 1 of IS 285), one percent sodium carbonate solution (conforming to IS 296) and 2 percent sodium hydroxide solution and washed with water, rinsed and dried. The above test shall be done independently on three different samples, one each for each test solution.

8.19 Vinyl coated fabrics shall also comply with the requirements as given in Table 1.

Table 1 Requirements for Vinyl Coated Fabrics

(*Clauses* 6.2, 8.19, 8.19.1, 8.19.3 *and* 8.19.4)

Sl No.	Characteristic	Requirements for						Method of Test, Refer To
		Type A				Type B		
		Grade 1	Grade 2	Grade 3	Grade 4	Grade 1	Grade 2	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	Usable width of finished fabric, cm, *Min*	125	125	125	125	125	125	IS 7016 (Part 1/Sec 1)
ii)	Mass of finished fabric, g/m^2, *Min,*	680	460	380	300	700	600	IS 7016 (Part 1/Sec 2)
iii)	Breaking/tensile strength in kgf, *Min*							Method 1 of IS 7016 (Part 2)
	a) Longitudinal direction	100.0	80.0	60.0	30.0	55.0	40.0	
	b) Transverse direction	90.0	65.0	35.0	20.0	40.0	30.0	
iv)	Tear strength (load in Kg) in both directions, *Min*	10.0	8.0	5.0	4.0	4.0	3.0	Method A of IS 7016 (Part 3/Sec 1)
v)	Resistance to damage by flexing (number of flexing cycles in thousands), *Min*							Method A of IS 7016 (Part 4)
	a) First stage	200	100	50	25	400	300	
	b) Second stage[1)]	300	150	100	50	600	500	

[1)] The number of flexing cycles of the second stage includes the number of flexing cycles of the first stage.

8.19.1 Width of the Finished Fabric

The usable width when measured in accordance with IS 7016 (Part 1/Sec 1) shall comply with the requirements given in Table 1. Widths other than those specified in Table 1, may also be supplied if agreed between the purchaser and the supplier.

8.19.2 Mass of Finished Fabric

Mass of finished fabric shall be tested in accordance with IS 7016 (Part1/Sec 2). Three test pieces, one from the centre and the other two symmetrical with the first, in such a manner that their external edge is between 50 and 150 mm from the selvedge of the sample taken along a line which makes an angle of 45° with the length of the roll.

8.19.3 Breaking/Tensile Strength

When tested in accordance with Method 1 of IS 7016 (Part 2), the materials shall comply with the requirements given in Table 1. Each test piece shall be 50 ± 0.5 mm wide and of sufficient length to allow a distance of 200 ± 1 mm between the jaws of the test machine. If the elongation exceeds 75 percent, reduce the length to 100 ± 1 mm.

8.19.3.1 If there is a woven support, take a wider strip and reduce the width to 50 ± 0.5 mm by fraying if possible. If fraying is not possible, cut the test pieces in the direction of testing as exactly as possible along a thread. It is very important to ensure that the test pieces are parallel to the warp threads or weft threads, as the case may be.

8.19.3.2 If there is a knitted support, cut the test pieces to their final dimensions by following a wale or course. In case of knitted fabrics, the direction with higher strength value, shall be taken as warp direction and the other direction shall be perpendicular to it.

NOTE — If any test piece breaks within 10 mm of line of contact of either of the jaws, record the result; but if it is found to have broken at a load less than 75 percent of the average of the remainder of the specimens, do not use it in calculating the breaking load. Test another specimen.

8.19.4 Resistance to Damage by Flexing

When tested by Method A of IS 7016 (Part 4), the material shall comply with the number of flexing cycles given in Table 1. The material shall be considered to have complied with the requirements, if none of the test pieces, has shown signs of cracking to stage 'D', after the first stage and not more than half the test pieces have failed after the second stage of the test. For checking cracking to stage 'D', the middle one-third portion, which is folded with curvature outside, shall be examined according to the following method:

To ascertain, whether cracking has extended to the base fabric, bend the flexed test specimen face outwards, around a glass rod 6 mm in diameter with a piece

of a filter paper between the test specimen and the rod. Brush a suitable coloured fluid, such as red ink containing 2 percent of a wetting agent over the flexed surface. Consider the test specimen as cracked only if the ink stains the filter paper.

9 TESTS

9.1 Tests shall be conducted as prescribed in appropriate annexes and relevant Indian Standards, as referred in this standard.

9.2 Test Specimens

Test pieces shall be cut from the samples in the required number and in the appropriate manner as specified in the individual methods of test and in accordance with Annex K.

9.2.1 In case where less than 2 m sample is to be tested, the number of test specimens may be reduced at the discretion of the purchaser.

10 PACKING, MARKING AND STORAGE

10.1 Packing

The material shall be securely packed in the form of a roll so as to ensure safe transportation. Care should be taken so that the roll is not winded too tight, which may leave impression of back fabric on coated surface.

10.1.1 *Roll Length*

The material shall be in rolls of minimum 20 m length. Short lengths of less than 20 m shall be permitted, but the number of such short lengths shall not be more than 2 per roll. Further, no short length shall be less than 5 m in length. In any consignment, not more than 10 percent of the rolls shall contain 2 pieces.

10.2 Marking

10.2.1 Each roll of coated fabric shall be supplied with a label with the following information:

a) Name and/or trade-mark, if any, of the manufacturer;
b) Type, grade and class of material;
c) Month and year of manufacture;
d) Length of coated fabric in the roll, in metres; and
e) Any other statutory requirements.

10.2.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

10.3 Storage

The rolls of vinyl coated fabrics shall be stored vertically on dry, clean, firm and level surface. The rolls shall be protected from dust, moisture, direct sunlight, corrosive and solvent fumes.

11 SAMPLING, NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

11.1 Scale of Sampling

11.1.1 Lot

In any consignment, all the rolls of vinyl coated fabrics of the same grade, colour and finish shall be grouped together and each such group shall constitute a lot.

11.1.2 The conformity of the lot to the requirements of the specification shall be ascertained for each lot separately. The number of rolls to be selected from lot shall depend on the size of the lot and shall be at random in accordance with Table 2.

11.1.3 The rolls shall be selected at random and to ensure randomness of selection, the procedure recommended in IS 4905 shall be followed.

Table 2 Scale of Sampling

(*Clause* 11.1.2)

Sl No.	Lot Size	Number of Rolls to be Selected
(1)	(2)	(3)
i)	1	1
ii)	2 to 100	2
iii)	101 to 200	3
iv)	201 to 300	4
v)	301 and above	5

11.2 Number of Test

11.2.1 Each of the lengths obtained from a lot shall be examined for visual defects and coating and if found satisfactory, further tests as specified shall be carried out.

11.2.2 From each of the rolls selected according to **11.1.2**, 2 m length (measured between two weft threads) of vinyl coated fabric shall be cut, care being taken to exclude not less than 0.25 m length of fabric from either end. The test specimens necessary for the various test specified in the standard shall be cut from the lengths of vinyl coated fabric, thus obtained. Scheme of selection of test specimens from the sample length is given in Fig. 4. All the samples shall be kept out of contact from one another or any other material that may cause contamination.

11.3 Criteria for Conformity

11.3.1 The lot shall be declared as conforming to specification, if each of the test results satisfies the corresponding requirements as given in **7**.

11.3.2 If the specimen, taken from a 2 m length, fails in one or more tests, each such tests shall be repeated twice. For this purpose two further samples shall be taken from the same batch/lot, but from the rolls, other than those , from which the earlier samples had been drawn. The specimens shall be cut from them, so that duplicate tests may be conducted in respect of each failure. If all the specimens pass the duplicate tests, the lot shall be declared conforming to the specification, otherwise not.

ANNEX A

(*Clause* 8.4)

TEST FOR COLOUR, GRAIN EMBOSSING AND FINISH (RECOMMENDED METHOD)

A-1 PROCEDURE

A-1.1 Colour comparison shall be made in good north daylight.

A-1.2 Normal colour vision is essential for reliable colour comparison.

A-1.3 It is imperative to note that the result is influenced by the gloss and the state of the surface of the coated fabric. In addition, the presence of embossing pattern and differences in gloss, induces variations, which can be large, in the results, while the colour itself remains the same. Moreover, reflection can vary noticeably from place to place on the surface depending on the embossing pattern.

A-1.4 Pattern shall be of adequate size and not less than 100 cm^2 when checking a standard or reference pattern against roll of material, it is useful to place the pattern on top of the material undergoing examination.

A-1.5 When comparing patterns of embossed materials, particularly two coloured, it is important to place them so that the grain 'runs the same way' in each test and also to view them from different angles. Slight difference of brightness or dullness of surface can effect colour comparisons and can be equalized by moistening the surface of both.

A-1.6 Standard patterns shall be kept clean and stored in the dark.

ANNEX B

(*Clause* 8.6)

TEST FOR RESISTANCE TO HEAT AND LOSS OF MASS ON HEATING

B-1 TEST SPECIMENS

The same three specimens of 10 cm × 10 cm used to determine mass of finished fabric as per IS 7016 (Part 1/Sec 2) shall be subjected to this test.

B-2 APPARATUS

B-2.1 Circulating air oven, of such a size that the total volume of the test assemblies does not exceed 10 percent of the free space in the oven.

B-2.2 The temperature of the oven shall be thermostatically controlled to maintain the temperature of the test assemblies within ± 2 °C of the specified temperature. Baffles shall be used, as required, to prevent overheating and dead spots. Provision shall be made for circulation of air through the oven at a rate such as, to provide a minimum of six air changes per hour.

B-3 PROCEDURE

B-3.1 Suspend the test specimens vertically, in a hot air circulating oven, after it has been preheated to the specified operating temperature. The test pieces are to be stationary, free from strain and mounted so as to be at least 100 mm from the oven walls at any point, to permit adequate circulation of air on all sides of specimens.

B-3.2 At the end of the exposure period, take out the test specimens from oven and cool at room temperature for 60 min. Examine for any signs of exudation or stickiness. After this examination, condition the test specimens for 16 h at standard atmosphere and weigh the test specimens to the nearest 0.005 g.

B-4 CALCULATION

Calculate the loss in mass on heating as follows:

$$\text{Loss in mass, on heating, percent} = \frac{100\,(M_1 - M_2)}{M_1}$$

where

M_1 = mass in g, of the specimen taken for test; and

M_2 = mass in g, of the specimen after heating.

ANNEX C

(*Clause* 8.8)

TEST FOR COLOUR FASTNESS TO DRY AND WET RUBBING

C-1 APPARATUS

C-1.1 The apparatus shown in Fig. 1 shall consist of an abrading member A and a means of clamping the test piece over a plate glass surface B in such a manner that the abrading member and the test pieces are capable of relative reciprocating motion in a straight line. The amplitude of reciprocation, that is the stroke shall be 100 mm and the apparatus shall be mechanically operated or hand driven so that the rate of reciprocation shall be 15 ± 2 cycles (each of two strokes) per min.

C-1.2 Abrading Member

The abrading member *A* shown in Fig. 2, shall consist of a brass peg and shall be suitably and firmly secured to the arm of the apparatus so that its centre line is at right angles to the surface of the glass plate. The arms of the apparatus shall be not less than 230 mm in length measured from the centre point of the abrading member to the pivot, and shall be loaded in such a manner that the brass peg exerts a load of 5 N (0.5 kgf) on the test piece. Means shall be provided for firmly securing a strip of the specified bleached fabric around the end of the brass peg. Screw clip having been found suitable for this purpose. Suitable grips *C* and *D* shall be provided to ensure that the test piece can be secured firmly across the plate glass surface.

C-1.3 White Cotton Fabric

Bleached but not starched and in sufficient quantity for testing all the specimens. The bleached cotton fabric shall correspond to variety No. 1 of IS 177. Cut circles, 50 mm in diameter, from the bleached fabric for using in the tests.

C-2 TEST SPECIMENS

Cut from the sample at random not less than six rectangular pieces, 250 mm long and 50 mm wide, with their length parallel to the warp direction. Condition the test specimens for not less than 2 h in the standard atmosphere and carry out the subsequent testing in that atmosphere.

C-3 PROCEDURE

C-3.1 Dry Rubbing

Cut a circle, 50 mm in diameter, from the bleached fabric (*see* **C-1.3**) and attach to the under surface of the abrading member of the apparatus, using the clip. Mount the test specimen with the coated side uppermost, over the plate glass surface such that the 'stroke' falls symmetrically within the dimensions of the test piece. Firmly secure the test piece in position by means of suitable grips, wipe with cotton-wool to remove dust and subject it to abrasion. Stop the test after 10 complete abrading cycles. Remove the fabric from the abrading member. Back each tested rubbing cloth with three layers of white rubbing cloth while examining the area of the fabric, which has been in contact with the specimen for colour stains. Assess the staining of the cotton rubbing cloths with the grey scale under suitable illumination.

C-3.2 Wet Rubbing

Carry out the test in a similar way as under **C-3.1** using a circle of bleached fabric dipped in soap-soda solution containing 5 g of soap (conforming to Type 1 of IS 285) and 2 g of sodium carbonate (conforming to IS 296) in one liter of water, immediately prior to mounting on the abrading member. Subject the test piece to 10 complete abrading cycles. Remove the fabric and air dry. Back each tested rubbing cloth with three layers of white rubbing cloth while examining the area of the fabric, which has been in contact with the specimen for colour stains. Assess the staining of the cotton rubbing cloths with the grey scale under suitable illumination.

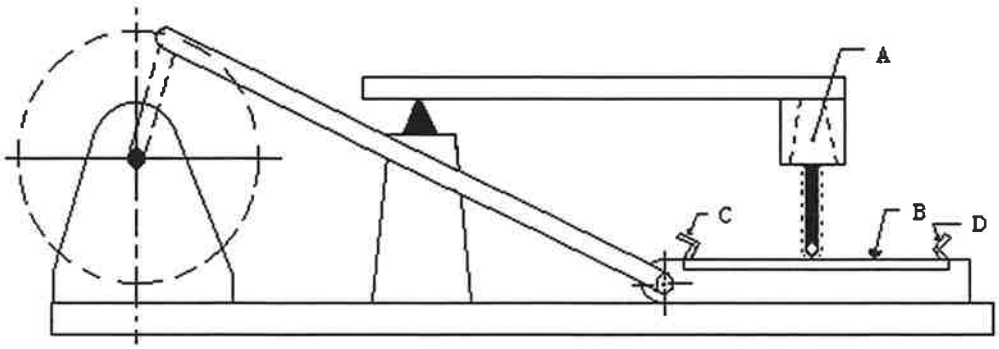
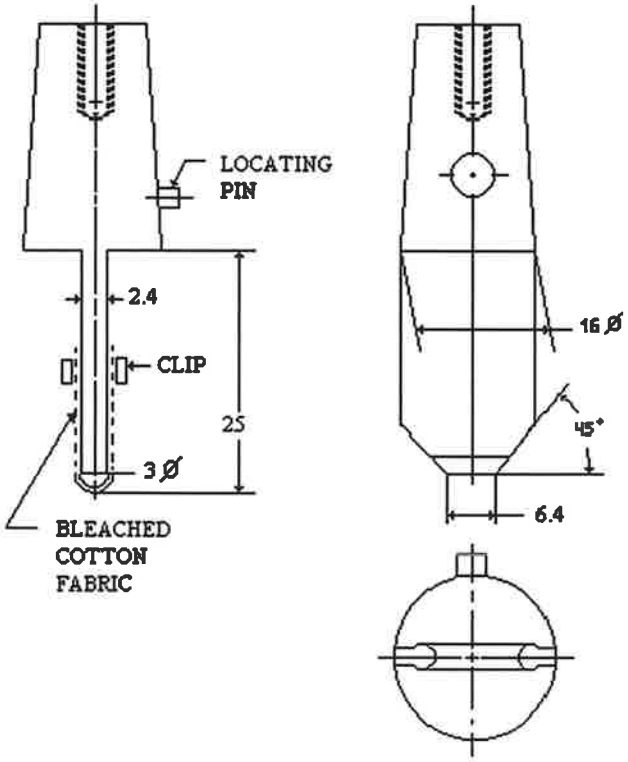


FIG 1. APPARATUS FOR MEASURING COLOUR FASTNESS TO DRY AND WET RUBBING AND ADHESION OF PRINT



All dimensions in millimeters.

FIG. 2 DETAILS OF ABRADING MEMBER A

ANNEX D

(*Clause* 8.9)

TEST FOR COLOUR FASTNESS TO LIGHT

D-1 APPARATUS

D-1.1 The essential features of the apparatus are a wooden box of 90 cm × 60 cm × 5 cm with a cover of window glass of 3 mm thickness. The bottom of the box shall be fitted with wire mesh of 0.315 mm thickness to allow ventilation. A removable wooden rack with batten of wood, equally spaced, is fitted to the box. The approximate width of the batten shall be 10 cm and the distance between the battens shall be 5 cm. The batten shall be equally spaced to allow ventilation in the box.

D-1.2 Blue Wool Fabric

Blue wool reference sample as prescribed in IS/ISO 105-B01.

D-2 TEST SPECIMENS

Cut from the sample at random a test specimen 130 mm long and 15 mm to 50 mm wide.

D-3 PROCEDURE

D-3.1 Place the box in the open, facing south in the northern hemisphere. Support on legs about 75 cm high, and incline the case horizontal at 45°. There shall be no obstruction from any direction. Place the test samples in the case so that no shadows are cast during day time on the exposed samples.

D-3.2 Attach to the rack a set of blue wool standards of convenient size along with the test specimens and put these in the exposure case. Protect half the portions from light by covering the samples with aluminium foil or any suitable thin opaque material.

Wipe out daily the cover of the glass case to remove the dust falling on it.

D-4 REPORTING

D-4.1 Observe the test specimens and the wool standards at suitable intervals till the blue wool Reference No. 4 shows a fading (the visual contrast between the exposed and the unexposed portions) equivalent to grade 4 on the geometric grey scale. The glass lid shall be kept clean during the test.

D-4.2 Remove the specimens from the box, clean with soap solution (conforming to Type 1 of IS 285) and cold water. Dry and examine the test specimens indoors in good north light against a white background.

D-4.3 Compare the visual contrast between exposed and unexposed portions of the specimen with the grade 4 on the geometric grey scale. If the contrast between the exposed and the unexposed portions of the specimen is equal to or less than the contrast of the grey scale, the material shall be declared conforming to the requirement, otherwise not.

ANNEX E

(*Clause* 8.10)

DETERMINATION OF DIMENSIONAL CHANGE

E-1 PROCEDURE

Cut a specimen 30 cm × 30 cm with two sides parallel to the longitudinal direction. Draw lines parallel and perpendicular and make a square of 25 cm. Measure the distance between the marked lines to the nearest millimetre. Immerse the specimen completely under the surface of water containing a suitable wetting agent maintained at a temperature between 25 to 30 °C. Use suitable means, such as small weight, to keep it submerged. Leave the specimen to soak for 2 h, then rinse it in plain water and leave it to dry on a flat surface at a temperature between 25 to 30 °C. Dry the material, under standard atmospheric conditions for 16 h and measure the distance between the lines.

E-2 CALCULATION

E-2.1 Calculate the percentage of shrinkage between each pair of datum marks by the relation:

$$\text{Shrinkage, percent} = \frac{100\,(L_1 - L_2)}{L_1}$$

where

L_1 = distance between the lines before shrinkage treatment, and

L_2 = distance between the lines after shrinkage treatment.

E-2.2 Report the mean shrinkage separately for the warp and weft directions correct to within 0.1 percent.

ANNEX F

(*Clause* 8.11)

TEST FOR ADHESION OF PRINT

F-1 APPARATUS

F-1.1 Apparatus as given in **C-1.1**.

F-1.2 Abrading Member — Apparatus as given in **C-1.2**.

F-1.3 White Cotton Fabric — The bleached cotton fabric shall correspond to variety No. 1 of IS 177. Cut circles, 50 mm in diameter, from the bleached fabric for using in the tests.

F-2 REAGENT

Soap conforming to Type 1 of IS 285.

F-3 PREPARATION OF TEST PIECE

Not less than three rectangular test pieces 250 mm × 50 mm shall be cut from the sample with their lengths parallel to the longitudinal direction of the sample. The test pieces shall be cut in such a manner that each contains a portion of the printed design in such a position that it will lie in the path of the abrading member. Where the printed pattern consists of a multi-coloured design, sufficient test piece shall be prepared to enable three tests to be carried out on each colour combination or print. By suitable choice of position of test pieces, it is usually possible to have more than one print colour abraded during any particular test.

F-4 PROCEDURE

The test piece shall be washed with soap and water, rinsed and dried. They shall then be conditioned in the room in which the test is to be performed for at least 24 h before testing and the temperature throughout this period shall be maintained at 27 ± 2 °C. Each test piece shall be mounted in turn directly on the plate glass surface. No wrinkling of the test piece shall occur during test and it is permissible to stretch the test piece up to 20 percent in the direction of its length to avoid wrinkling. A 50 mm circle of the bleached fabric shall be then be secured to the glass peg. The ribbed side of the fabric shall be in contact with the peg. The peg to which the fabric has been fitted shall be lowered on to the test piece. The test piece shall then be subjected to 10 strokes of abrading member and observed for any visible damage.

F-5 EXPRESSION OF RESULT

Report the change in print pattern between the abraded and unabraded portions of the test specimen.

ANNEX G

(*Clause* 8.12.3)

TEST FOR FLAME RESISTANCE

G-1 APPARATUS

G-1.1 A Metal Stand — A stand shown in Fig. 3 shall have the size 300 mm × 300 mm, shielded from three sides up to 250 mm. The upper frame of the stand shall be used to fix the test specimen.

G-1.2 Bunsen Burner — Bunsen burner with 10 ± 1 mm internal diameter, with a supply of liquefied petroleum gas.

G-1.3 Paper Clamps — Large paper clamps shall be suitable to hold the specimen in slight tension.

NOTE — The paper clamps are similar to those used by students to clip paper on wooden board or plastic sheet.

G-1.4 Adjustable stand or wooden blocks to adjust the height of the burner.

G-1.5 Pinch cock for adjusting the height of the flame of the burner.

G-1.6 Stop watch of an accuracy 0.2 s.

G-2 TEST SPECIMEN

G-2.1 Cut from the sample a rectangular piece of size 300 mm × 400 mm which may sufficient to have enough length to be folded around the rods of the frame and clamped.

G-3 PROCEDURE

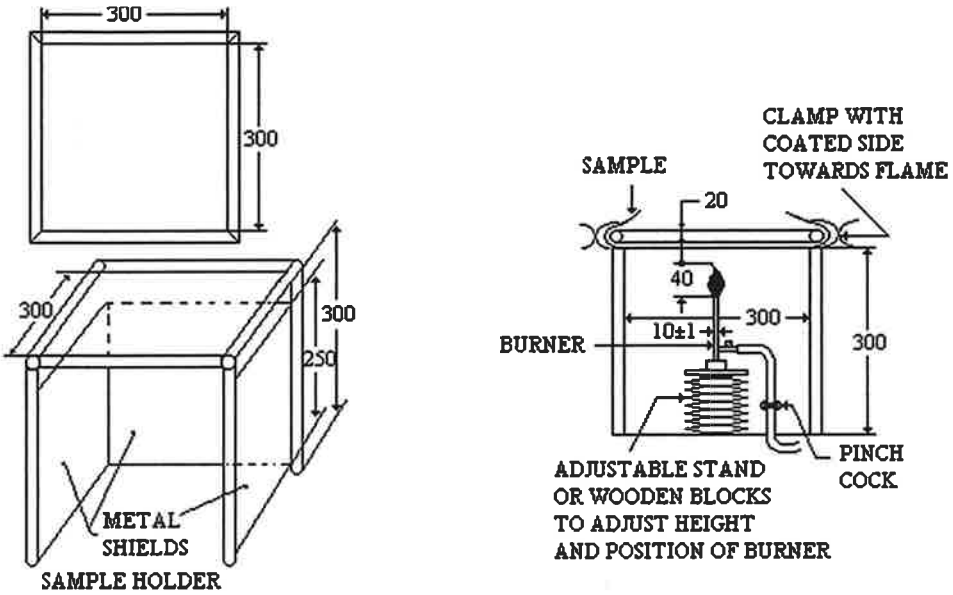
G-3.1 Set up the apparatus in a fume cupboard, support the test specimen horizontally, with the coated side of the fabric towards the flame, by means of four paper

clamps, to each on the opposite sides of the specimen in such a manner that area of 300 mm × 300 mm will be exposed to flame without sag.

G-3.2 Shut off, completely, the air supply to the burner and adjust the burner to give a luminous flame of 40 mm in length by means of the pinch cock. Place the burner in such a position that the tip of the flame is 20 mm below the centre of specimen. Apply the flame for a period of 20 seconds and then withdraw it.

G-3.3 Record separately by stop watch the time during which flaming continues.

G-3.4 The finished fabric when tested shall meet the requirement of **8.12.3**.



All dimensions in millimeters

FIG. 3 APPARATUS FOR FLAME RESISTANCE TEST

ANNEX H

(*Clause* 8.15)

DETERMINATION OF RESISTANCE TO PENETRATION OF WATER

H-1 APPARATUS

H-1.1 The apparatus shall consist of a central well fitted with a coaxial ring clamp to fasten the test piece over the well. The apparatus shall introduce water at test-room temperature from below the test piece over a circular area 100 cm^2 (approximately 113 mm diameter) in diameter at the rate of 10 ± 2 mm of hydrostatic head per second. The rubber tubing connecting the constant-level device and the well shall have an inside diameter of not less than 6 mm.

H-1.2 If necessary, soft rubber sealing gaskets can be employed between the coated fabric test specimen and the surfaces of the clamps in order to block any leakage and reduce the risk of damage to the test specimen by the clamps.

H-2 TEST SPECIMENS

H-2.1 The test piece shall be either circular, of diameter 130 to 200 mm, or of corresponding square shape. It shall be taken at least 0.10 m from the selvedge and 1 m from the end of the roll.

H-2.2 Unless otherwise specified in the material specification, three test pieces shall be tested from each sample unit.

H-3 PROCEDURE

H-3.1 Wipe all surface water from the clamping surfaces. Lay the test piece smoothly on the face of the lower ring of the clamp and fasten the upper plate in place, ensuring that the coated fabric is in contact with the water and that no air is trapped between the test piece and the water. This shall form a watertight compartment.

H-3.2 With the leveler at the zero position, turn the water on and keep it running at such a rate as to overflow continuously. Raise the constant level device at a rate of 10 mm/s to a predetermined height and record the time at which the first drop of water appears on the underside of the test piece. No account shall be taken of very fine droplets of water which are formed at or near the clamping edge.

H-3.3 The elapsed time before the first drop of water appeared on the underside, is noted for each test piece and the average value for all test pieces is determined.

ANNEX J

(*Clause* 8.16)

DETERMINATION OF ELONGATION AND ELASTIC RECOVERY FOR A CONSTANT LOAD

J-1 APPARATUS

J-1.1 The essential features of the apparatus shall be two grips capable of clamping test specimens 100 mm wide. One grip (the upper grip) shall be capable of being attached to a fixed support so that when the test specimen is centered in the grip and clamped with the jaws of the grip running across the specimen, the specimen hangs in the vertical plane. The other (lower) grip shall be designed, so that dead loads can be added to bring its mass up to a total of 10 kg. The height of the frame shall be such that the loaded specimen can extend freely without touching the floor or lab bench.

J-1.2 A scale graduated in millimeters.

J-2 TEST SPECIMENS

Cut three specimens each 400 mm × 100 mm with the length in the longitudinal direction, and three specimens of the same size but with the length parallel to the cross-direction. Space the selection so as to cover fairly evenly the full width and available length of the sample, avoiding uncoated edges or selvedge ends. Identify each specimen accordingly.

J-3 PROCEDURE

J-3.1 Draw two fine lines across each specimen, at right angles to its longest dimension, 100 mm from each end and 200 mm (L_1) apart. Draw a third line to cut these two lines at their mid point. Make all measurements along this line.

J-3.2 Insert a specimen centrally in the upper grip, with the line at the upper end not less than 50 mm from the jaws. Insert the other end in the lower grip in the same way. Attach the fixed grip to the frame.

J-3.3 Apply smoothly to the lower grip a weight piece that will bring the total mass of the lower grip to 10 kg and note the time. After 10 min, measure and note the distance L_2 between the two lines, with specimen still under tension.

J-3.4 Remove the load and withdraw the specimen from the grips. Place it on a flat horizontal surface. After 10 min measure and note the distance L_3 between the two lines.

J-3.5 Repeat the procedure with the remaining specimens.

J-4 EXPRESSION OF RESULTS

J-4.1 Calculate the elongation, expressed as a percentage of the initial distance between the lines, from the formula:

$$\text{Elongation, percent} = \frac{(L_2 - L_1) \times 100}{L_1}$$

where

L_1 = the original distance, in mm, between the lines; and

L_2 = the distance, in mm, between the lines, after extension under constant load.

J-4.2 Calculate the elastic recovery, expressed as a percentage of elongation, from the formula:

$$\text{Elastic recovery, percent} = \frac{(L_2 - L_3) \times 100}{(L_2 - L_1)}$$

where

L_3 = the distance, in mm, between the lines after recovery.

J-4.3 Calculate the elongation and elastic recovery for each specimen and report the means for the set of three specimens in each direction to the nearest 0.5 percent.

J-4.4 If the conditions of test vary from the standard above (*Example* — In relation to specimen length), the conditions shall be reported.

ANNEX K

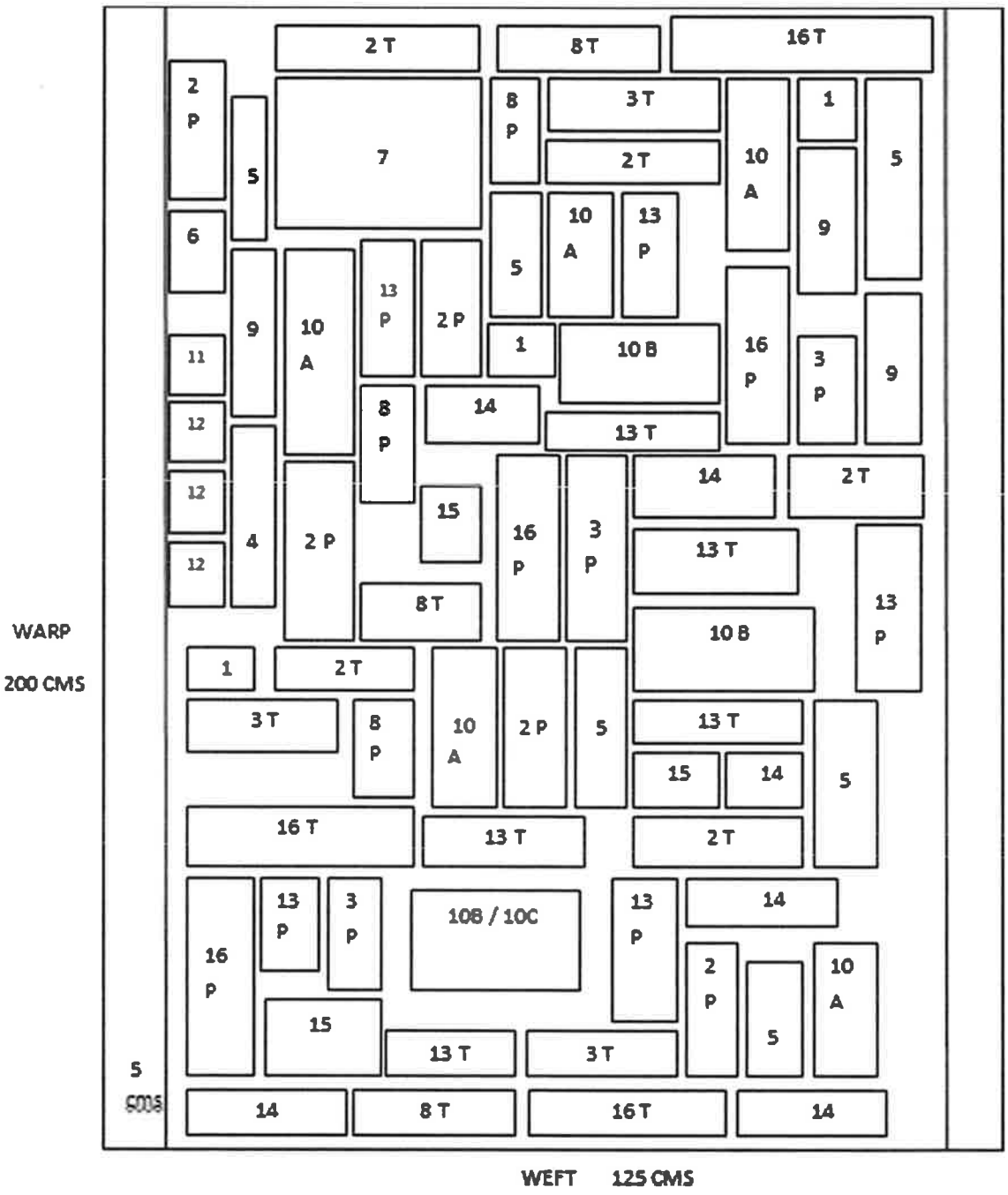
(*Clause* 9.2)

METHOD OF SELECTION OF TEST SPECIMENS

K-1 METHOD

K-1.1 The test specimens shall be selected from 2 m sample of full width, when it is laid on a flat rigid surface with fabric side uppermost without any tension in either direction.

K-1.2 Draw the lines for test specimens over the sample as laid in **K-1.1** in accordance with Fig. 4 which shows the positions of the specified numbers of specimens for each test.



P = specimen in the warp direction, and

T = specimen in the weft direction.

FIG. 4 SCHEME FOR SELECTION OF TEST SPECIMENS (NOT TO SCALE)

SCHEME OF SELECTION AND TESTING OF TEST SPECIMENS

Sl No.	Characteristic	Test Method	Clause	No. of Specimen	Size of Specimen
1	Mass of coated fabric	IS 7016 (Part 1/Sec 2)	8.19	3	100 mm × 100 mm
	Resistance to heat and loss of mass on heating	Annex B	8.6		100 mm × 100 mm
2	Breaking/tensile strength	IS 7016 (Part 2)	8.19	Warp = 5 Weft = 5	300 mm × 50 mm 300 mm × 50 mm
3	Tear strength	Method A IS 7016 (Part 3/Sec1)	8.19	Warp = 3 Weft = 3	225 mm × 75 mm 225 mm × 75 mm
4	Resistance to cold		8.7	1	250 mm × 6 mm
5	Colour fastness to dry/wet rubbing	Annex C	8.8	6	250 mm × 50 mm with length parallel to warp
6	Colour fastness to light	Annex D	8.9	1	130 mm × 50 mm
7	Dimensional change	Annex E	8.10	1	300 mm × 300 mm with sides parallel to length
8	Resistance to damage by flexing	IS 7016 (Part 4)	8.19	Warp = 3 Weft = 3	125 mm × 37.5 mm 125 mm × 37.5 mm
9	Adhesion of print (for printed products)	Annex F	8.11	3	250 mm × 50 mm with length parallel to warp
10A	Flame resistance (Class A)	Clause **3.2** of IS 15061	8.12.1	5	356 mm × 100 mm
10B	Flame resistance (Class B)	Clause **3.3** of IS 15061	8.12.2	3	560 mm × 170 mm
10C	Flame resistance (Class C)	Annex G	8.12.3	1	300 mm × 400 mm
11	Bleeding test		8.17	1	40 mm × 40 mm
12	Surface resistance to chemicals		8.18	3	40 mm × 40 mm
13	Adhesion of coating	IS 7016 (Part 5)	8.13	Warp = 5 Weft = 5	200 mm × 75 mm 200 mm × 75 mm
14	Blocking resistance	IS 7016 (Part 9)	8.14	6	150 mm × 150 mm
15	Resistance to penetration of water	Annex H	8.15	3	Circular of dia 130 mm
16	Elongation and elastic recovery	Annex J	8.16	Warp = 3 Weft = 3	400 mm × 100 mm 400 mm × 100 mm

ANNEX M

(*Foreword*)

COMMITTEE COMPOSITION

Rubber and Rubber Products Sectional Committee, PCD 13

Organization	*Representative(s)*
The Rubber Board, Kottayam	DR SIBY VARGHESE (***Chairman***)
All India Rubber Industries Association, Mumbai	SHRI SRIKANTH KRISHNAMURTHY SHRI CHINMOY RAY (*Alternate*)
Association of Planters of Kerala, Kerala	SHRI SANTOSH KUMAR SHRI PHILIP C. JACOB (*Alternate*)
Automotive Tyres Manufacturers Association (ATMA), New Delhi	SHRI NITEESH K. SHUKLA SHRI RAJIV BUDHRAJA (*Alternate*)
Block Rubber Processor's Association of India	SHRI RAJIV THARIAN SHRI RONNY JOSEPH (*Alternate*)
Ministry of Defence (DGQA), New Delhi	SHRI S. K. SAXENA SHRI V. K. CHHABRA (*Alternate*)
Dow Corning India Pvt Ltd,	SHRI SUBHRANSHU GUPTA
Flame Retardants Association of India, Gurugram	SHRI P. V. MURALI MOHAN
GRP Limited, Mumbai	SHRI KALYAN DAS
HASETRI, Rajasthan	SHRI SAIKAT DAS GUPTA
Indian Oil Corporation R and D Centre, Faridabad, Haryana	DR DEEPAK SAXENA DR PANKAJ BHATNAGAR (*Alternate*)
Indian Rubber Manufacturers Research Association (IRMRA), Mumbai	DR K. RAJKUMAR DR BHARAT KAPGATE (*Alternate*)
Indian Synthetic Rubber Private Limited (ISRPL), Noida	SHRI LALIT KUMAR SHARMA SHRI BHANU PRATAP SINGH (*Alternate*) SHRI TUHIN KANTI DAS (*Young Professional*)
KA Prevulcanized, Tamilnadu	SHRI PRAVEEN MATHEW
LPG Equipment Research Centre, Bengaluru	SHRI NARESH GERA SHRI A. KRISHNA KUTTY (*Alternate*)
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MRF Tyres	SHRI G. SHYJU MS P. IDUMATHI (*Alternate*)
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Rado Industries Limited, Faridabad	SHRI KAILASH GUPTA
Reliance Industries Ltd (Elastomers Business), Vadodara	DR ABHIJIT ADHIKARY MR SHAMBHU LAL AGRAWAL (*Alternate*)
Research, Designs and Standards Organization, Lucknow	SHRI MNJESH KUMAR SHRI RAVI PRAKASH (*Alternate*)
Shri Sati Rubber Industries, Jaipur	SHRI VIJAY KUMAR AGARWAL SHRI SUDHIR AGARWAL (*Alternate*)
Voluntary Organization in Interest of Consumer Education (VOICE), New Delhi	SHRI M. A. U. KHAN SHRI H. WADHWA (*Alternate*)
In Personal Capacity	DR ARUP K. CHANDRA

Organization	*Representative(s)*
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In Personal capacity	DR RANJIT MATHHAN
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Member Secretary

SHRI VIJAY KUMAR GUPTA
SCIENTIST 'D' (PCD), BIS

(*Continued from second cover*)

g) An alternative quicker method of determining colour fastness to light by xenon arc has been prescribed;

h) Test method and requirement for adhesion of coating to fabric have been modified;

j) Scheme of selection of test specimens has been revised;

k) The recommended usage of various grades/classes of vinyl coated fabrics have also been incorporated; and

m) Amendment no. 1, 2 and 3 have also been considered while revision of the standard.

The composition of the Committee responsible for formulation of this standard is given in Annex M.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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Amendments Issued Since Publication

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असाधारण
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भारतीय मानक ब्यूरो

(उपभोक्ता मामले विभाग)

अधिसूचना

नई दिल्ली, 5 अप्रैल, 2022

संदर्भ: HQ-PUB012/1/2020-PUB-BIS (337).—भारतीय मानक ब्यूरो नियम, 2018 के नियम 15 के उपनियम (1) के अनुसरण में भारतीय मानक ब्यूरो एतदद्वारा अधिसूचित करता है की जिन भारतीय मानकों के विवरण इसमें संलग्न अनूसूची के द्वितीय स्तंभ में दिये गये हैं, तीसरे स्तंभ में इंगित तिथि को स्थापित हो गये हैं| चौथे स्तंभ में दिये गये मानकों के विवरण, यदि कोई हो तो वे भी साथ-साथ लागू रहेंगे जब तक वे पाँचवें स्तंभ में इंगित तिथि को वापस लिए जाने हैं|

अनुसूची

क्रम सं.	स्थापित भारतीय मानकों की संख्या, वर्ष तथा शीर्षक	प्रतिस्थापन तिथि	भारतीय मानकों, यदि वापस लिए जाने हैं, की संख्या, वर्ष तथा शीर्षक	वापस होनें की तिथि
(1)	(2)	(3)	(4)	(5)
1	आई एस 1165 : 2022 संपूर्ण दूध पाउडर – विशिष्टि (छटा पुनरीक्षण)	5 अप्रैल 2022	आई एस 1165 : 2002 दूध पाउडर – विशिष्टि (पाँचवाँ पुनरीक्षण)	4 जनवरी 2023

2	आई एस 1166 : 2022 मीठा संघनित दूध, मीठा संघनित आंशिक मलाईरहित दूध, मीठा संघनित मलाईरहित दूध एवं मीठा संघनित उच्च वसायुक्त दूध – विशिष्टि (तीसरा पुनरीक्षण)	5 अप्रैल 2022	आई एस 1166 : 1986 संघनित दूध, आंशिक रूप से स्किम्ड और स्किम्ड संघनित दूध के लिए विशिष्टता (दूसरा पुनरीक्षण)	4 जनवरी 2023

इन मानकों की प्रतियाँ भारतीय मानक ब्यूरो, मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली 110002, क्षेत्रीय कार्यालयों: कोलकाता, चंडीगढ़, चेन्नई, मुम्बई तथा शाखा कार्यालयों : अहमदाबाद, बेंगलुरु, भोपाल, भुबनेश्वर, कोयम्बटूर, देहरादून, फरीदाबाद, गाज़ियाबाद, गुवाहाटी, हैदराबाद, जयपुर, जम्मु, जमशेदपुर, लखनऊ, नागपुर, परवानू, पटना, पुणे, रायपुर, राजकोट, कोच्चि, विशाखापटनम में बिक्री हेतु उप्लब्ध हैं. भारतीय मानकों को http://www.standardsbis.in पर आनलाईन खरीदा/ डाउनलोड किया जा सकता है|

जे. राय चौधरी, वैज्ञानिक जी एवं उपमहानिदेशक (मानकीकरण – I)

[विज्ञापन III/4/असा./15/2022-23]

BUREAU OF INDIAN STANDARDS

(Department of Consumer Affairs)

NOTIFICATION

New Delhi, the 5th April, 2022

Ref: HQ-PUB012/1/2020-PUB-BIS(337).—In pursuance of Sub-rule (1) of Rule (15) of the Bureau of Indian Standards Rules, 2018, the Bureau of Indian Standards hereby notifies that Indian standards, particulars of which are given in the second column of the schedule hereto annexed have been established on the date indicated against it in third column. The particulars of the standards, if any which are given in the fourth column shall also remain in force concurrently till they are withdrawan on the date indicated against them in the fifth column.

SCHEDULE

Sl No.	No., Year & Title of the Indian Standards Established	Date of Establishment	No. , Year & Title of the Indian Standards to be withdrawan, if any	Date of withdrawal
(1)	(2)	(3)	(4)	(5)
1	IS 1165 : 2022 Whole Milk Powder — Specification (Sixth Revision)	5 Apr 2022	IS 1165 : 2002 Milk Powder — Specification (Fifth Revision)	4 Jan 2023
2	IS 1166 : 2022 Sweetened Condensed Milk, Sweetened Condensed Partly Skimmed Milk, Sweetened Condensed Skimmed Milk and Sweetened Condensed High Fat Milk — Specification (Third Revision)	5 Apr 2022	IS 1166 : 1986 Specification for Condensed Milk, Partly Skimmed and Skimmed Condensed Milk (Second Revision)	4 Jan 2023

Copies of these standards are available for sale with Bureau of Indian Standards, Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi – 110 002; Regional Offices: Kolkata, Chandigarh, Chennai, Mumbai and Branch Offices: Ahmedabad, Bengaluru, Bhopal, Bhubaneshwar, Coimbatore, Dehradun, Faridabad, Ghaziabad, Guwahati, Hyderabad, Jaipur, Jammu, Jamshedpur, Lucknow, Nagpur, Parwanoo, Patna, Pune, Raipur, Rajkot, Kochi, Vishakhapatanam. Online purchase/downloading of Indian Standards can be made at http://www.standardsbis.in.

J. ROY CHOWDHURY, Scientist G & DDG (Standardization – I)

[ADVT.-III/4/Exty./15/2022-23]

अधिसूचना

नई दिल्ली, 5 अप्रैल, 2022

संदर्भ: HQ-PUB013/1/2020-PUB-BIS (338).—भारतीय मानक ब्यूरो नियम, 2018 के नियम 15 के उपनियम (1) के अनुसरण में भारतीय मानक ब्यूरो एतदद्वारा अधिसूचित करता है की जिन भारतीय मानकों के विवरण इसमें संलग्न अनूसूची के द्वितीय स्तंभ में दिये गये हैं, तीसरे स्तंभ में इंगित तिथि को स्थापित हो गये हैं| चौथे स्तंभ में दिये गये मानकों के विवरण, यदि कोई हो तो वे भी साथ-साथ लागू रहेंगे जब तक वे पाँचवें स्तंभ में इंगित तिथि को वापस लिए जाने हैं |

अनुसूची

क्रम सं.	स्थापित भारतीय मानकों की संख्या, वर्ष तथा शीर्षक	प्रतिस्थापन तिथि	भारतीय मानकों, यदि वापस लिए जाने हैं, की संख्या, वर्ष तथा शीर्षक	वापस होनें की तिथि
(1)	(2)	(3)	(4)	(5)
1	आई एस 397 (भाग 4) : 2022/आई एस ओ 7870-4 : 2021 उत्पादन के दौरान सांख्यिकीय गुणता नियंत्रण की प्रणाली भाग 4 सचंयी जोड़ चार्ट (तीसरा पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 397 (भाग 4) : 2018/आई एस ओ 7870-4 : 2011 उत्पादन के दौरान सांख्यिकीय गुणता नियंत्रण की प्रणाली भाग 4 संचयी जोड़ चार्ट (दूसरा पुनरीक्षण)	4 मई 2022
2	आई एस 1152 : 2022 आइसिंग चीनी – विशिष्टि (तीसरा पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 1152 : 2003 आइसिंग चीनी – विशिष्टि (दूसरा पुनरीक्षण)	4 मई 2022
3	आई एस 1259 : 2022 विनाइल कोटेड फेब्रिक की विशिष्टि (चौथा पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 1259 : 1984 विनाइल कोटेड फेब्रिक की विशिष्टि (तीसरा पुनरीक्षण)	4 मई 2022
4	आई एस 2400 : 2022 बेसन – विशिष्टि (दूसरा पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 2400 : 1976 बेसन के लिए विशिष्टि (पहला पुनरीक्षण)	4 मई 2022

5	आई एस 2935 : 2022/आई ई सी 60122-2 : 1983 आवृत्ति नियंत्रण और चयन के लिए क्वार्ट्ज क्रिस्टल इकाइयाँ भाग 2 आवृत्ति नियंत्रण और चयन के लिए क्वार्ट्ज क्रिस्टल इकाइयों के उपयोग के लिए गाइड (दूसरा पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 2935 : 1980 आवृत्ति नियंत्रण और चयन के लिए क्वार्ट्ज क्रिस्टल इकाइयों के उपयोग के लिए गाइड (पहला पुनरीक्षण)	4 मई 2022
6	आई एस 3566 : 2022 वस्त्रादि – विस्कोस रेयान कट स्टेपल (स्पन) धागे – विशिष्टि (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 3566 : 1966 विस्कोस रेयान कट स्टेपल (स्पन) धागे के लिए विशिष्टि	4 मई 2022
7	आई एस 4439 : 2022 वस्त्रादि – रेयॉन की मखमल – विशिष्टि (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 4439 : 1967 रेयॉन की मखमल के लिए विशिष्टि	4 मई 2022
8	आई एस 4591 (भाग 2) : 2022 स्वचालित सीढ़ियाँ एवम चलपथ भाग 2 अनुरक्षण के लिए मार्गदर्शिका	**5 अप्रैल 2022**	लागू नहीं	लागू नहीं
9	आई एस 5742 : 2022 औद्योगिक स्क्रीन और स्क्रीनिंग से संबंधित शब्दों की शब्दावली (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 5742 (भाग 1) : 1970 चलनी के नीचे के लिए नियम और प्रतीक भाग 1 बुने हुए और वेल्डेड तार स्क्रीन आई एस 5742 (भाग 2) : 1970 चलनी के नीचे के लिए नियम और प्रतीक भाग 2 छिद्रित प्लेट्स	4 मई 2022
10	आई एस 8698 : 2022 एक्सपेंडेड विनाइल कोटेड फेब्रिक – विशिष्टि (दूसरा पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 8698 : 1984 एक्सपेंडेड विनाइल कोटेड फेब्रिक के लिए विशिष्टि (पहला पुनरीक्षण)	4 मई 2022
11	आई एस 8986 : 2022 षट्कोणीय एकीकृत वेधक इस्पात और विस्तारक छड़ें और सरिया के आकार में	**5 अप्रैल 2022**	आई एस 8986 : 1994 आघात वेधन – सरिया रूप में वेधन इस्पात –	4 मई 2022

	खोखले गोलाकार वेधक इस्पात – आयाम (दूसरा पुनरीक्षण)		आयाम (पहला पुनरीक्षण)	
12	आई एस 9309 : 2022 घूमने वाले क्रशर के लिए विशिष्टि (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 9309 : 1979 घूमने वाले क्रशर के लिए विशिष्टि	4 मई 2022
13	आई एस 9917 : 2022 कैल्शियम से बने तप्त-स्थायी ग्रीज – विशिष्टि (दूसरा पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 9917 : 1993 कैल्शियम से बने तप्त-स्थायी ग्रीज – विशिष्टि (पहला पुनरीक्षण)	4 मई 2022
14	आई एस 10901 : 2022 प्रोटीन आधिक्य (पौष्टिक) आटा – विशिष्टि (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 10901 : 1984 पौष्टिक गेहूं का आटा के लिए विशिष्टता	4 मई 2022
15	आई एस 10902 : 2022 प्रोटीन आधिक्य (पौष्टिक) मैदा – विशिष्टि (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 10902 : 1984 पौष्टिक गेहूं का मैदा के लिए विशिष्टता	4 मई 2022
16	आई एस 11637 : 2022 कैल्शियम आधारित ई पी ग्रीस – विशिष्टि (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 11637 : 1986 कैल्शियम आधारित ई पी ग्रीस के लिए विशिष्टि	4 मई 2022
17	आई एस 15260 : 2022/आई एस ओ 9947 : 2005 वस्त्रादि मशीनरी एवं सहायकांग – टू-फॉर-वन टविस्टरर्स – शब्दावली (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 15260 : 2002 वस्त्रादि मशीनरी – टू-फार-वन टिवस्टर – शब्दावली	4 मई 2022
18	आई एस 15963 (भाग 6) : 2022/आई एस ओ 12647-6 : 2020 ग्राफिक प्रौद्योगिकी – हाफ-टोन कलर पृथक्करण, प्रूफ और उत्पादन प्रिंट के उत्पादन हेतु प्रक्रिया नियंत्रण भाग 6 फ्लैक्सोग्राफिक छपाई (दूसरा पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 15963 (भाग 6) : 2015/आई एस ओ 12647-6 : 2012 ग्राफिक प्रौद्योगिकी – हाफ-टोन कलर पृथक्करण, प्रूफ और उत्पादन प्रिंट के उत्पादन हेतु प्रक्रिया नियंत्रण भाग 6 फ्लैक्सोग्राफिक छपाई (पहला पुनरीक्षण)	4 मई 2022

19	आई एस 17825 : 2022/आई एस ओ 3972 : 2011 संवेदी विश्लेषण – कार्यपद्धति – स्वाद की संवेदनशीलता जाँचने की विधि	**5 अप्रैल 2022**	लागू नहीं	लागू नहीं
20	आई एस 17856 : 2022 झिल्ली के रूप में उपयोग के लिए वल्केनाइज्ड एकल परत रबर शीट्स – विशिष्टि	**5 अप्रैल 2022**	लागू नहीं	लागू नहीं
21	आई एस 17865 : 2022/आई एस ओ 16875 : 2004 वस्त्रादि मशीनरी – सूती धागे की कताई के लिए रिंग स्पिनिंग मशीन – शब्दावली	**5 अप्रैल 2022**	लागू नहीं	लागू नहीं
22	आई एस 17866 : 2022/आई एस ओ 13435 : 2011 वस्त्रादि मशीनरी एवं सहायकांग – विद्युतीय ताना गति अवरोधकों की ड्राप तारों के लिए बार्स	**5 अप्रैल 2022**	लागू नहीं	लागू नहीं
23	आई एस 17867 (भाग 1) : 2022/आई एस ओ 13990-1 : 2006 वस्त्रादि मशीनरी एवं सहायकांग – बुनाई मशीनों के लिए धागा फीडर और धागा नियंत्रक भाग 1 शब्दावली	**5 अप्रैल 2022**	लागू नहीं	लागू नहीं
24	आई एस 17867 (भाग 2) : 2022/आई एस ओ 13990-2 : 2006 वस्त्रादि मशीनरी एवं सहायकांग – बुनाई मशीनों के लिए धागा फीडर और धागा नियंत्रक भाग 2 धागा फीडर और धागा नियंत्रण उपकरणों के लिए आयाम जोड़ना	**5 अप्रैल 2022**	लागू नहीं	लागू नहीं
25	आई एस 17867 (भाग 3) : 2022/आई एस ओ 13990-3 : 2006 वस्त्रादि मशीनरी एवं सहायकांग – बुनाई मशीनों के लिए धागा फीडर और धागा नियंत्रक भाग 3 कनेक्टिंग और इंटरकनेक्शन केबल्स के लिए आयाम	**5 अप्रैल 2022**	लागू नहीं	लागू नहीं

26	आई एस 17868 : 2022/आई एस ओ 368 : 2017 कताई प्रिपरेटरी, कताई और दोहरीकरण (घुमावदार) मशीनरी – रिंग-स्पिनिंग, दोहरीकरण और घुमावदार स्पिंडल के लिए ट्यूब, टेपर 1 : 38 और 1 : 64	**5 अप्रैल 2022**	आई एस 3625 (भाग 2) : 1984 रिंग स्पिनिंग और डबलिंग स्पिंडल के लिए वार्प ट्यूबों के लिए विशिष्टता भाग 2 ट्यूबों के लिए अनुशंसित आयाम, टेपर 1:38 (दूसरा पुनरीक्षण) आई एस 3625 (भाग 3) : 1984 रिंग स्पिनिंग और डबलिंग स्पिंडल के लिए वार्प ट्यूबों के लिए विशिष्टता भाग 3 ट्यूबों के लिए अनुशंसित आयाम, टेपर 1:64 (दूसरा पुनरीक्षण)	4 मई 2022
27	आई एस/आई एस ओ/आई ई सी 24735 : 2021 सूचना प्रौद्योगिकी – कार्यालय उपकरण – डिजिटल नकल उत्पादकता को मापने के लिए विधि	**5 अप्रैल 2022**	लागू नहीं	लागू नहीं
28	आई एस/आई ई सी 60068-2-5 : 2018 पर्यावरण परीक्षण भाग 2 टेस्ट अनुभाग 5 टेस्ट एस जमीनी स्तर पर नकली सौर विकिरण और सौर विकिरण परीक्षण और अपक्षय के लिए मार्गदर्शन	**5 अप्रैल 2022**	आई एस 9000 (भाग 17) : 1985 इलेक्ट्रॉनिक और इलेक्ट्रिकल आइटम के लिए बुनियादी पर्यावरण परीक्षण प्रक्रियाएं भाग 17 विकिरण परीक्षण (पहला पुनरीक्षण) आई एस 9001 (भाग 11) : 1973 पर्यावरण परीक्षण के लिए मार्गदर्शन भाग 11 सौर विकिरण परीक्षण	4 मई 2022
29	आई एस/आई ई सी 60068-2-17 : 1994 बुनियादी पर्यावरण परीक्षण प्रक्रियाएं भाग 2 टेस्ट	**5 अप्रैल 2022**	आई एस 9000 (भाग 15/अनुभाग 1 से 9) : 1982 इलेक्ट्रॉनिक और	4 मई 2022

	अनुभाग 17 टेस्ट Q: सीलिंग		इलेक्ट्रिकल आइटम के लिए बुनियादी पर्यावरण परीक्षण प्रक्रियाएं भाग 15 सीलिंग टेस्ट आई एस 9001 (भाग 8) : 1982 पर्यावरण परीक्षण के लिए मार्गदर्शन भाग 8 सीलिंग टेस्ट	
30	आई एस/आई ई सी 60068-2-38 : 2021 पर्यावरण परीक्षण भाग 2 टेस्ट अनुभाग 38 टेस्ट जेड/एडी: संयुक्त तापमान/आवर्तनशील आर्द्रता परीक्षण	**5 अप्रैल 2022**	आई एस 9000 (भाग 6) : 1978 इलेक्ट्रॉनिक और इलेक्ट्रिकल आइटम के लिए बुनियादी पर्यावरण परीक्षण प्रक्रियाएं भाग 6 संयुक्त तापमान/आवर्तनशील आर्द्रता चक्र परीक्षण	4 मई 2022
31	आई एस/आई ई सी 60068-2-47 : 2005 पर्यावरण परीक्षण भाग 2 टेस्ट अनुभाग 47 कंपन, संघात और इसी तरह के गत्यात्मक परीक्षण के लिये नमूनों की स्थापना	**5 अप्रैल 2022**	आई एस 9001 (भाग 12) : 1977 पर्यावरण परीक्षण के लिए मार्गदर्शन भाग 12 गतिशील परीक्षणों के लिए इलेक्ट्रॉनिक और विद्युत वस्तुओं की स्थापना	4 मई 2022
32	आई एस/आई ई सी 60068-3-1 : 2011 पर्यावरण परीक्षण भाग 3 सहायक दस्तावेज़ीकरण और मार्गदर्शन अनुभाग 1 शीत और शुष्क गर्मी परीक्षण	**5 अप्रैल 2022**	आई एस 9001 (भाग 2) : 1977 पर्यावरण परीक्षण के लिए मार्गदर्शन भाग 2 शीत और शुष्क गर्मी परीक्षण	4 मई 2022
33	आई एस/आई ई सी 60068-3-4 : 2001 पर्यावरण परीक्षण भाग 3 सहायक दस्तावेज़ीकरण और मार्गदर्शन अनुभाग 4 नम गर्मी परीक्षण	**5 अप्रैल 2022**	आई एस 9001 (भाग 4) : 1979 पर्यावरण परीक्षण के लिए मार्गदर्शन भाग 4 नम गर्मी परीक्षण	4 मई 2022

34	आई एस/आई ई सी 60143-3 : 2015 पावर प्रणाली हेतु श्रेणी संधारित्र भाग 3 आंतरिक फ़्यूज़ (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस 9835-3 : 2012/आई ई सी 60143-3 : 1998 पावर सिस्टम के सीरिज कैपेसिटर्स भाग 3 आंतरिक फ़्यूज़ आई एस 12677 : 1989 श्रेणी संधारित्रों के लिए आन्तरिक फ्यूज – विशिष्टि	4 मई 2022
35	आई एस/आई ई सी 60695-1-30 : 2017 अग्नि जोखिम परीक्षण भाग 1 इलेक्ट्रोटेक्निकल उत्पादों के आग के खतरे का आकलन करने के लिए मार्गदर्शन अनुभाग 30 पूर्व चयन परीक्षण प्रक्रिया – सामान्य दिशानिर्देश	**5 अप्रैल 2022**	आई एस 11000 (भाग 1/अनुभाग 3) : 1993/आई ई सी पब 695-1-3 : 1986 अग्नि जोखिम परीक्षण भाग 1 विद्युत तकनीकी उत्पादों की अग्नि जोखिमों के मूल्यांकन के लिये अपेक्षाओं और परीक्षण विशिष्टियों की तैयारी का मार्गदर्शन अनुभाग 3 पूर्व चयन कार्य विधियों के उपयोग के लिये मार्गदर्शन आई एस 11000 (भाग 3/अनुभाग 1) : 1993/आई ई सी पब 695-3-1 : 1982 अग्नि जोखिम परीक्षण भाग 3 अग्नि जोखिम मूल्यांकन के उदाहरण और उनको ज्ञात करने के परिणाम अनुभाग 1 वहां लक्षण और परीक्षण पद्धतियों के सर्वेक्षण की व्याख्या और कार्यविधियां	4 मई 2022
36	आई एस/ आई ई सी 60695-2-13 : 2021 अग्नि जोखिम परीक्षण भाग 2 ग्लोइंग/हॉट-वायर आधारित परीक्षण विधियाँ अनुभाग 13 सामग्री के लिए ग्लो-वायर इग्निशन तापमान (GWIT) परीक्षण	**5 अप्रैल 2022**	आई एस/ आई ई सी 60695-2-13 : 2014 अग्नि जोखिम परीक्षण भाग 2 प्रज्वलित/गर्म-तार आधारित परीक्षण तरीके अनुभाग 13 सामग्री के लिए प्रज्वलित–तार	4 मई 2022

	विधि (पहला पुनरीक्षण)		ज्वलंत तापमान (GWIT) परीक्षण विधि	
37	आई एस/आई ई सी 61557-1 : 2019 1 000 वोल्ट ए सी और 1 500 वोल्ट डीसी तक के अल्प वोल्टता वितरण तंत्रों में विद्युत सुरक्षा – सरंक्षी मापों को परीक्षण करने, माप करने या मॉनीटर करने का उपस्कर भाग 1 सामान्य अपेक्षाएँ (पहला पुनरीक्षण)	**5 अप्रैल 2022**	आई एस/आई ई सी 61557-1 : 2007 1 000 वोल्ट ए सी और 1 500 वोल्ट डी सी तक के अल्प वोल्टता वितरण तंत्रों में विद्युत सुरक्षा – सरंक्षी मापों को परीक्षण करने, माप करने या मॉनीटर करने का उपस्कर भाग 1 सामान्य अपेक्षाएँ	4 मई 2022

इन मानकों की प्रतियाँ भारतीय मानक ब्यूरो, मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली 110002, क्षेत्रीय कार्यालयों:कोलकाता, चंडीगढ़, चेन्नई, मुम्बई तथा शाखा कार्यालयों : अहमदाबाद, बेंगलुरु, भोपाल, भुबनेश्वर, कोयम्बटूर, देहरादून, फरीदाबाद, गाज़ियाबाद, गुवाहाटी, हैदराबाद, जयपुर, जम्मु, जमशेदपुर, लखनऊ, नागपुर, परवानू, पटना, पुणे, रायपुर, राजकोट, कोच्चि, विशाखापटनम में बिक्री हेतु उप्लब्ध हैं. भारतीय मानकों को http://www.standardsbis.in पर आनलाईन खरीदा/ डाउनलोड कि या जा सकता है]

जे. राय चौधरी, वैज्ञानिक जी एवं उपमहानिदेशक (मानकीकरण – I)

[विज्ञापन III/4/असा./15/2022-23]

NOTIFICATION

New Delhi, the 5th April, 2022

Ref: HQ-PUB013/1/2020-PUB-BIS (338).—In pursuance of Sub-rule (1) of Rule (15) of the Bureau of Indian Standards Rules, 2018, the Bureau of Indian Standards hereby notifies that Indian standards, particulars of which are given in the second column of the schedule hereto annexed have been established on the date indicated against it in third column. The particulars of the standards, if any which are given in the fourth column shall also remain in force concurrently till they are withdrawn on the date indicated against them in the fifth column.

SCHEDULE

Sl No.	No., Year & Title of the Indian Standards Established	Date of Establishment	No. , Year & Title of the Indian Standards to be withdrawn, if any	Date of withdrawal
(1)	(2)	(3)	(4)	(5)
1	IS 397 (Part 4) : 2022/ISO 7870-4 : 2021 Methods for Statistical Quality Control during Production Part 4 Cumulative Sum Charts (Third Revision)	5 Apr 2022	IS 397 (Part 4) : 2018/ISO 7870-4 : 2011 Methods for Statistical Quality Control During Production Part 4 Cumulative Sum Charts (Second Revision)	4 May 2022

2	IS 1152 : 2022 Icing Sugar — Specification (Third Revision)	5 Apr 2022	IS 1152 : 2003 Icing Sugar — Specification (Second Revision)	4 May 2022
3	IS 1259 : 2022 Specification for Vinyl Coated Fabrics (Fourth Revision)	5 Apr 2022	IS 1259 : 1984 Specification for Vinyl Coated Fabrics (Third Revision)	4 May 2022
4	IS 2400 : 2022 Besan — Specification (Second Revision)	5 Apr 2022	IS 2400 : 1976 Specification for Besan (First Revision)	4 May 2022
5	IS 2935 : 2022/IEC 60122-2 : 1983 Quartz Crystal Units for Frequency Control and Selection Part 2 Guide to the Use of Quartz Crystal Units for Frequency Control and Selection (Second Revision)	5 Apr 2022	IS 2935 : 1980 Guide for the Use of Quartz Crystal Units for Frequency Control and Selection (First Revision)	4 May 2022
6	IS 3566 : 2022 Textiles — Viscose Rayon Cut Staple (Spun)Yarn — Specification (First Revision)	5 Apr 2022	IS 3566 : 1966 Specification for Viscose Rayon Cut Staple (Spun)Yarn	4 May 2022
7	IS 4439 : 2022 Textiles — Rayon Velvet — Specification (First Revision)	5 Apr 2022	IS 4439 : 1967 Specification for Rayon Velvet	4 May 2022
8	IS 4591 (Part 2) : 2022 Escalators and Moving Walks Part 2 Guide for Maintenance	5 Apr 2022	NA	NA
9	IS 5742 : 2022 Glossary of Terms Relating to Industrial Screen and Screening	5 Apr 2022	IS 5742 (Part 1) : 1970 Terms and Symbols for Sieve Bottoms Part 1 Woven and Welded	4 May 2022

	(First Revision)		Wire Screens IS 5742 (Part 2) : 1970 Terms and Symbols for Sieve Bottoms Part 2 Perforated Plates	
10	IS 8698 : 2022 Expanded Vinyl Coated Fabrics — Specification (Second Revision)	5 Apr 2022	IS 8698 : 1984 Specification for Expanded Vinyl Coated Fabrics (First Revision)	4 May 2022
11	IS 8986 : 2022 Hexagonal Integral Drill Steel and Extensions Rods and Hollow Round Drill Steel in Bar Form — Dimensions (Second Revision)	5 Apr 2022	IS 8986 : 1994 Percussive Drilling — Drill Steels in Bar Form — Dimensions (First Revision)	4 May 2022
12	IS 9309 : 2022 Specification for Roll Crusher (First Revision)	5 Apr 2022	IS 9309 : 1979 Specification for Roll Crusher	4 May 2022
13	IS 9917 : 2022 Calcium Base Heat Stable Grease — Specification (Second Revision)	5 Apr 2022	IS 9917 : 1993 Calcium Base Heat Stable Grease — Specification (First Revision)	4 May 2022
14	IS 10901 : 2022 Protein-Rich (Paushtik) Atta — Specification (First Revision)	5 Apr 2022	IS 10901 : 1984 Specification for Paushtik Wheat Atta	4 May 2022
15	IS 10902 : 2022 Protein-Rich (Paushtik) Maida — Specification (First Revision)	5 Apr 2022	IS 10902 : 1984 Specification for Paushtik Wheat Maida	4 May 2022
16	IS 11637 : 2022 Calcium Based EP Grease — Specification (First Revision)	5 Apr 2022	IS 11637 : 1986 Specification for Calcium Base EP Grease	4 May 2022

17	IS 15260 : 2022/ISO 9947 : 2005 Textile Machinery and Accessories — Two-for-One Twisters — Vocabulary (First Revision)	5 Apr 2022	IS 15260 : 2002 Textile Machinery — Two-for-One Twisters — Vocabulary	4 May 2022
18	IS 15963 (Part 6) : 2022/ISO 12647-6 : 2020 Graphic Technology — Process Control for the Production of Half-tone Colour Separations, Proof and Production Prints Part 6 Flexographic Printing (Second Revision)	5 Apr 2022	IS 15963 (Part 6) : 2015/ISO 12647-6 : 2012 Graphic Technology — Process Control for the Production of Half-Tone Colour Separations, Proof and Production Prints Part 6 Flexographic Printing (First Revision)	4 May 2022
19	IS 17825 : 2022/ISO 3972 : 2011 Sensory Analysis — Methodology — Method of Investigating Sensitivity of Taste	5 Apr 2022	NA	NA
20	IS 17856 : 2022 Vulcanized Single Layer Rubber Sheets for Use as Membrane — Specification	5 Apr 2022	NA	NA
21	IS 17865 : 2022/ISO 16875 : 2004 Textile Machinery — Ring Spinning Machines for Cotton Spinning — Vocabulary	5 Apr 2022	NA	NA
22	IS 17866 : 2022/ISO 13435 : 2011 Textile Machinery and Accessories — Bars for Drop Wires for Electrical Warp Stop Motions	5 Apr 2022	NA	NA
23	IS 17867 (Part 1) : 2022/ISO 13990-1 : 2006 Textile Machinery and Accessories — Yarn Feeders and Yarn Control for Knitting Machines Part 1 Vocabulary	5 Apr 2022	NA	NA
24	IS 17867 (Part 2) : 2022/ISO 13990-2 : 2006 Textile Machinery and Accessories — Yarn Feeders and Yarn Control for Knitting Machines	5 Apr 2022	NA	NA

	Part 2 Connecting Dimensions for Yarn Feeders and Yarn Control Devices			
25	IS 17867 (Part 3) : 2022/ISO 13990-3 : 2006 Textile Machinery and Accessories — Yarn Feeders and Yarn Control for Knitting Machines Part 3 Dimensions for Connecting and Interconnection Cables	5 Apr 2022	NA	NA
26	IS 17868 : 2022/ISO 368 : 2017 Spinning Preparatory, Spinning and Doubling (Twisting) Machinery — Tubes for Ring-Spinning, Doubling and Twisting Spindles, Taper 1 : 38 and 1 : 64	5 Apr 2022	IS 3625 (Part 2) : 1984 Specification for Warp Tubes for Ring Spinning and Doubling Spindles Part 2 Recommended Dimensions for Tubes, Taper 1 : 38 (Second Revision) IS 3625 (Part 3) : 1984 Specification for Warp Tubes for Ring Spinning and Doubling Spindles Part 3 Recommended Dimensions for Tubes, Taper 1 : 64 (Second Revision)	4 May 2022
27	IS/ISO/IEC 24735 : 2021 Information Technology — Office Equipment — Method for Measuring Digital Copying Productivity	5 Apr 2022	NA	NA
28	IS/IEC 60068-2-5 : 2018 Environmental Testing Part 2 Tests Section 5 Test S simulated solar radiation at ground level and guidance for solar radiation testing and weathering	5 Apr 2022	IS 9000 (Part 17) : 1985 Basic Environmental Testing Procedures for Electronic and Electrical Items Part 17 Radiation Test (First Revision) IS 9001 (Part 11) : 1973 Guidance for Environmental Testing Part 11 Solar Radiation Test	4 May 2022

29	IS/IEC 60068-2-17 : 1994 Basic Environmental Testing Part 2 Tests Section 17 Test Q: Sealing	5 Apr 2022	IS 9000 (Part 15/Sec 1 to 9) : 1982 Basic Environmental Testing Procedures for Electronic and Electrical Iems Part 15 Sealing Test IS 9001 (Part 8) : 1982 Guidance for Environmental Testing Part 8 Sealing Test	4 May 2022
30	IS/IEC 60068-2-38 : 2021 Environmental Testing Part 2 Tests Section 38 Test Z/AD : Composite Temperature/Humidity Cyclic Test	5 Apr 2022	IS 900 (Part 6) : 1978 Basic Environmental Testing Procedures for Electronic and Electrical Iems Part 6 Composite Temperature/Humidity Cycle Test	4 May 2022
31	IS/IEC 60068-2-47 : 2005 Environmental Testing Part 2 Tests Section 47 Mounting of Specimens for Vibration, Impact and Similar dynamic Tests	5 Apr 2022	IS 9001 (Part 12) : 1977 Guidance for Environmental Testing Part 12 Mounting of Electronic and Electrical Items for Dynamic Tests	4 May 2022
32	IS/IEC 60068-3-1 : 2011 Environmental Testing Part 3 Supporting Documentation and Guidance Section 1 Cold and Dry Heat Tests	5 Apr 2022	IS 9001 (Part 2) : 1977 Guidance for Environmental Testing Part 2 Cold and Dry Heat Tests	4 May 2022
33	IS/IEC 60068-3-4 : 2001 Environmental Testing Part 3 Supporting Documentation and Guidance Section 4 Damp Heat Tests	5 Apr 2022	IS 9001 (Part 4) : 1979 Guidance for Environmental Testing Part 4 Damp Heat Tests	4 May 2022
34	IS/IEC 60143-3 : 2015	5 Apr 2022	IS 9835-3 : 2012/IEC 60143-3 : 1998	4 May 2022

	Series Capacitors for Power Systems Part 3 Internal Fuses (First Revision)		Series Capacitors for Power Systems Part 3 Internal Fuses IS 12677 : 1989 Internal Fuses for Series Capacitors — Specification	
35	IS/IEC 60695-1-30 : 2017 Fire Hazard Testing Part 1 Guidance for Assessing the Fire Hazard of Electrotechnical Products Section 30 Preselection Testing Process — General Guidelines	5 Apr 2022	IS 11000 (Part 1/Sec 3) : 1993/IEC Pub 695-1-3 : 1986 Fire Hazard Testing Part 1 Guidance for the Preparation of Requirements and Test Specifications for Assessing Fire Hazard of Electronic and Electrical Items Section 3 Guidance for Use of Preselection Procedures IS 11000 (Part 3/Sec 1) : 1993/IEC Pub 695-3-1 : 1982 Fire Hazard Testing Part 3 Examples of Fire Hazard Assessment Procedures and Interpretation of Results Section 1 Combustion Characteristics and Survey of Test Methods for their Determination	4 May 2022
36	IS/IEC 60695-2-13 : 2021 Fire Hazard Testing Part 2 Glowing/Hot-wire Based Test Methods Section 13 Glow-wire ignition temperature (GWIT) test method for materials (First Revision)	5 Apr 2022	IS/IEC 60695-2-13 : 2014 Fire Hazard Testing Part 2 Glowing/Hot-wire Based Test Methods Section 13 Glow-wire ignition temperature (GWIT) test method for materials	4 May 2022
37	IS/IEC 61557-1 : 2019 Electrical Safety in Low Voltage Distribution Systems Up to 1 000 V	5 Apr 2022	IS/IEC 61557-1 : 2007 Electrical Safety in Low Voltage Distribution	4 May 2022

	a.c. and 1 500 V d.c. — Equipment for Testing, Measuring or Monitoring of Protective Measures Part 1 General Requirements (First Revision)		Systems Up to 1 000 V a.c. and 1 500 V d.c. — Equipment for Testing, Measuring or Monitoring of Protective Measures Part 1 General Requirements	

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J. ROY CHOWDHURY, Scientist G & DDG (Standardization – I)

[ADVT.-III/4/Exty./15/2022-23]

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